UNITED STATES PATENT APPLICATION

FOR

**Electronic Product Packaging and Distribution
For E-Commerce**

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Electronic Product Packaging and Distribution For E-Commerce

Field of the Invention

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The invention generally relates to packaging and distribution of goods for e-Commerce transactions, and more particularly to extending electronic shopping carts to include rules controlling access and distribution to a cart's goods.

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Background

Recently, traditional sales environments have made way for a new World Wide Web (web) approach to sales. The web is one facet of a global computer network commonly referred to as the Internet. Once, access to the Internet was essentially limited to corporations, universities, and government agencies. In recent years, however, consumer network connections have become commonplace, with connections being provided via dial-up modem connections to an Internet Service Provider (ISP), through cable modems (using the coaxial cables delivering cable-TV service), digital subscriber lines (DSL) (carried over common twisted pair telephone wiring), wireless services, and other mediums.

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The Internet allows computer systems and networks, by way of protocols and bridging/routing hardware, to interconnect via the Internet to form networks similar to local area networks (LANs or "intranets"). Through the internet, consumers are able to direct Internet browsers (e.g., Netscape Navigator and Internet Explorer) to virtual storefronts encoded as Hypertext Markup Language (HTML) or equivalent "web pages",

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as well as access other Internet "content" such as electronic mail (e-mail), news services, stock reports, travel services, and the like.

However, unlike in traditional retail contexts, there is no restriction on online stores regarding the location of goods offered by a store, nor the contents of the store. That is, a "virtual store" can present as in-stock goods that will actually be provided by multiple different vendors in communication with the virtual store. When a purchase is made, the virtual store can contact different vendors to effect delivery of purchased goods. With the advent of easy internetworking, and the global scope of the Internet, merchants and consumers are provided with heretofore unknown ability to reach a very large audience of other merchants and consumers.

To facilitate a consumer's spending quite a while browsing through a virtual store, such stores provide a virtual "shopping cart" to track intended purchases. As a consumer selects items for sale, these items are placed in the virtual shopping cart for later checkout. When the consumer ultimately seeks to leave the store, the consumer is directed to a virtual register to complete a point of sale transaction for goods accumulated within the shopping cart.

Although virtual storefronts greatly facilitate transactions by allowing arbitrarily complex (or simple) virtual storefronts, these virtual stores lack an ability to impose structure and coordinate the sales process. That is, frequently businesses want certain classes of employees to purchase particular collections of products (packages), or purchase from only certain types of products. For example, technical support personnel may be required to obtain certain high-end software and hardware, while recently hired employees may be restricted in their purchase ability. Also, employers may desire to control the registration and installation of purchased goods.

Unfortunately, imposing such structure on the sales process is not yet provided by virtual storefronts. In addition, virtual storefronts presently lack ability to seek alternate sales and installation avenues when a customer appears to lack authorization to make a purchase. Thus, in order to impose sales requirements, track

5　licenses, etc., an inefficient approach is generally employed, where an employee is designated as responsible for performing purchases for other employees and monitoring installations of these other employees.

Summary

10　A distribution method, in which an online distribution server, configured to receive incoming connections from a client, is connected to. A list of goods available for electronic and physical distribution to the client is received, and goods from the list are selected. Selected goods are added to an electronic shopping cart, and creation of a distribution package according to contents of electronic shopping cart is requested.

15　Access restrictions for the distribution package are then assigned.

Brief Description of the Drawings

Features and advantages of the invention will become apparent to one skilled in the art to which the invention pertains from review of the following detailed

20　description and claimed embodiments of the invention, in conjunction with the drawings in which:

FIG. 1 illustrates a client (consumer) in communication with a distribution server (virtual storefront) over a network.

FIG. 2 is a flowchart illustrating the client logging into the distribution

server.

FIG. 3 is a flowchart illustrating creating a package to be made available

for download by connecting clients.

5   FIG. 4 illustrates a suitable computing environment in which certain

aspects of the illustrated invention may be practiced.

Detailed Description

FIG. 1 illustrates a client **100** (consumer) in communication with a

10   distribution server **102** (hosting the virtual storefront) over a network **104** (e.g., the

Internet or other network).

It is assumed that the network connection is secured as necessary, such

as through use of Internet Protocol (IP) encryption, Secured Socket Layers (SSL), or

other encryption technology. In contrast with traditional sales environments, provided is

15   a sales environment in which purchase conditions can be required and enforced. As

used herein, the terms "server" and "distribution server" are intended to be synonymous.

In addition, note that although the client **100** is usually a consumer / purchaser, as will

be discussed more fully below, client's can also be managers or other entities that

contact the server **102** to define packages or modify the server's operation.

20   In one embodiment, the client **100** contacts the server **102**, and is

automatically presented with an interface indicating that certain packages (collections of

goods to be obtained) can or should be purchased by the client. For simplicity, it is

assumed a client **100** is interacting with a single virtual storefront, however it will be

appreciated that the invention is applicable to multiple storefronts, such that the

consumer can browse different storefronts to determine who is offering a particular package at a least-expensive price.

In one embodiment, clients **100** uses a network web browser such as Netscape Navigator or Microsoft Internet Explorer to contact a web-based application,

5   such as one implemented in Allaire Corporation's ColdFusion, HTML, Java, JavaScript, Common Gateway Interface (CGI) application programs, etc. A connecting client **100** may purchase goods such as hardware, software, books, music CDs, etc., and then install or upgrade the goods (if applicable) over the network **104** connection.

Available goods are stored in a database **106** in communication with the

10   server **102**, where database records **108** (entries) correspond to goods for sale. Records may be compound in that one record can correspond to a "package" corresponding to multiple goods that have been grouped for sale. In the illustrated embodiment, each record includes a unique ID **110** for each good for sale, a description **112**, a source **114** for a good (e.g., an identifier of an external source for the good), and

15   administrative data **116** corresponding to an entity or entities responsible for creating, maintaining, and handling issues related to sale of the good. It will be appreciated that a variety of formats may be used to track and cross-reference goods for sale.

In one embodiment, Microsoft Open DataBase Connectivity (ODBC) is used to access the database **106**. ODBC allows application programs to interact with

20   any ODBC compliant database management systems (DBMS) handling data. Generally, ODBC operates by providing "a middle layer" database driver between an application and a particular DBMS. This layer translates the application's data ODBC queries into native commands for the DBMS. An example of an ODBC application

program is ColdFusion, a product allowing web pages written in Cold Fusion Markup

Language (CFML) to integrate databases and web pages. Thus, a different database

backend can be substituted if needs change, while not affecting the front-end access

(e.g., ColdFusion), so long as the replacement database supports ODBC. Note that

5   ODBC is but one of many possible database connectivity options.

Associated with goods are shipping options **118**. Shipping includes

electronic as well as physical distribution. Some goods, such as books, may have only

physical distribution, whereas other goods, such as software, may provide electronic

and/or physical distribution. If goods are available for electronic distribution, once

10   purchased, the goods are directly copied to the client **100** for use by the purchasers.

FIG. 2 is a flowchart illustrating a manager or other entity responsible for

creating a package to be made available for download by connecting clients. The

phrase "other entity" is used since management may be automated and therefore driven

15   by a computing device according a rule set, or an expert system or other "artificial

intelligence" type of system.

It is assumed there is only a single distribution server, it will be

appreciated that if there are multiple servers (not shown), then a package created with

respect to one server needs to be identified to other servers. Updating servers can be

20   accomplished by sending (e.g., via push technology protocols) updates from a central

repository of packages, by an updated server contacting other known servers, or by

some other data push or pull arrangement.

If there are multiple distribution servers, in one embodiment, to conserve space, servers stores only links into a central repository storing downloadable packages. When a client seeks to purchase a particular good to be received over the network **104**, the good is actually received from the central repository. Certain high-priority (e.g., popular, secret, etc.) goods may be retained in a local storage of the distribution server.

As illustrated, a first operation is to login **200** to a distribution server **102** (FIG. 1); login includes a series of challenge / response operations designed to authenticate a contacting client to the server. Authenticated credentials determine access rights within the server's distribution environment. In one embodiment, clients can be a "manager" or a "user". However, it will be appreciated that other categories of users, such as "guest", "product manager", "purchasing manager", "finance manager", "community manager", "administrator", etc., may also be defined as required.

Managers oversee people within a particular company, group or organization (hereafter "corporation"). Managers can use the distribution server as other users, but they are also responsible for setting financial and access restrictions for the members of the manger's team. Manager access rights imply purchasing rights or signature authority for the manager's company. As illustrated, it is assumed the distribution server **102** corresponds to a single corporation where mangers have general rights to the distribution server. However, it will be appreciated that a distribution server may serve multiple corporations, and therefore managers and other categories of users are restricted to those goods and operations relevant to a particular corporation.

Users are the "average" client, and can be grouped or categorized. Users may only view, order and install goods in their assigned groups. Group definitions may overlap such that all users may be granted access rights to general goods, while certain departments, such as finance, may have additional finance-only access to other goods.

5   A user's manager determines the type of products a user can purchase, as well as how much money a user can spend out of their department's budget. In addition, in one embodiment, the distribution server can be integrated with or operating as a front end for a traditional mail-order system (or other online system) to allow client access to such external resources.

10   After authenticating to the server **102**, the server looks **202** up the client in a local client database (which may be a part of database **106**) to determine **204** the client's access rights. As discussed above, clients only "see" resources for which they have access authorization. After authenticating to the distribution server, customized web pages are dynamically created according to the client's access permissions. In

15   one embodiment, clients may override a default entry page displayed by the distribution server. For example, the default page may be a general information page containing links to all other distribution server resources available to the client. Or, a client may choose to have the entry page always be electronic products available for download by the client.

20   In one embodiment, customization preferences, such as desired start page, are stored in an HTML "cookie" maintained on the client's machine, and possibly backed up on the distribution server to allow restoration on loss or deletion of the cookie. Alternatively, preferences are stored in a local data-file read by the client's

application program (e.g., browser) utilized to access the distribution server. Thus, the server determines **206** the client's start page.

Once the client's authorization and preferences are determined, the distribution server then constructs **208** an appropriate start page for the client, and sends **210** it to the client over the network connection **104** (FIG. 1). Once the start page is received, the client issues **212** commands to the server, and the server responds **218** to the commands. Commands are executed by activating a portion of a web page sent **210** to the client, e.g., clicking on a button, selecting a drop-down list, clicking on an image map, executing a control (e.g., ActiveX or equivalent).

For example, the start page may contain a "Search for ..." button. Selecting the button causes a search command to be sent from the client to the server, possibly with parameter data regarding the type of search, scope, etc. to perform. If the search button was for locatinga product,such as software, on receiving the command the server searches for a product and lists only the product determined to be available to the client according to the client's access authorization determined from login **200** authentication.

If **214** the client's command was a request to quit, then interaction with the distribution server exits **216**. If there are pending purchases, the client is brought to a point of sale page and requested to confirm quitting or proceeding with purchase. If the client did not quit, after responding **218** to the command, processing loops **220** back to processing the client's next command.

FIG. 3 is a flowchart illustrating a manager or other entity responsible for creating a package (collection of physical and electronic goods) to be made available for purchase by connecting clients. Purchase may include downloading the package. A manager is simply a client; however, the term "manager" is used to distinguish

5   between connecting to the server to obtain goods, and connecting to the server to prepare goods for distribution to other clients.

After logging in **200** to the server (FIG. 2), the manager sends **250** an add command to the server. The add command instructs the server that the manager wishes to create a package to be distributed to other clients. In response, the server

10 sends **252** the manager a list of available goods that may be selected for inclusion within the package.

If a desired good for the package is not listed, then the manager must install the missing good onto the distribution server. Installation (not shown) includes copying the electronic goods to the distribution server, entering description and shipping

15 information for the good, entering pricing information, (e.g., fixed, regional, or upgrade) and applicable discounts, rebates, etc., export restrictions, and prerequisites (e.g., vendor requirements to qualify for purchase).

Since the list of possible goods to add to the package can be quite extensive, in one embodiment, as the manager selects **254** goods, they are

20 automatically added to a shopping cart. The manager then assigns **256** ordering priorities for items within the cart. Ordering priorities determine the order in which the various package items are processed when the package is purchased by a client.

After all desired goods have been selected, the manager chooses **258** a "create package" button, or equivalent web page control (e.g., defined in HTML, Java, ActiveX, ColdFusion, etc.) to create a package from the shopping cart contents.

In response the server sends **260** a form (or equivalent) requesting a name for the package, and related access restrictions for the package. The manager then decides which clients are allowed to have access to the new package, such as a list of individual clients in a particular programming group, department, or company if there are multiple companies handled by a particular distribution server. Once access rights are set, only clients with appropriate authenticated access rights will have access to the new package.

The manager completes **262** the form, and on submission to the server, causes the package to be named and assigned desired access permissions.

The server then creates **264** the package from the shopping cart contents, assigns the ordering priorities **256**, and updates the list of available goods so that the new package is made available to those clients with appropriate access rights. When such clients login to the distribution server, the server recognizes that a new package has been created for these clients, and if not already installed on the client, the new package may optionally be automatically copied **266** into each client's shopping cart. When a client decides to exit the distribution server, the presence of the package in the shopping cart will cause the client to be brought to a point of sale for the package.

Note that the above description assumes a manager issues an explicit add command to a distribution server. In an alternate embodiment, rather than explicitly notifying the distribution server of an add command, instead the manager engages in

typical purchase activity and accumulates goods within a shopping cart. Then, rather than proceeding to checkout, instead the manager selects a conversion option to convert all current shopping cart contents into the package.

5   FIG. 4 and the following discussion are intended to provide a brief, general description of a suitable computing environment in which certain aspects of the illustrated invention may be implemented. The invention may be described by reference to different high-level program modules and/or low-level hardware contexts. Those skilled in the art will realize that program module references can be interchanged with

10   low-level hardware instructions.

          Program modules include procedures, functions, programs, components, data structures, and the like, that perform particular tasks or implement particular abstract data types. The modules may be incorporated into single and multi-processor computing systems, as well as hand-held devices and controllable consumer devices

15   (e.g., Personal Digital Assistants (PDAs), cellular telephones, etc.). It is understood that modules may be implemented on a single computing device, or processed over a distributed network environment, where modules can be located in both local and remote memory storage devices.

          An exemplary system for implementing the invention includes a computing

20   device **302** having system bus **304** for coupling together various components within the computing device. The system **304** bus may be any of several types of bus structures, such as PCI, AGP, VESA, Microchannel, ISA and EISA, etc. Typically, attached to the bus **304** are processors **306** such as Intel, DEC Alpha, PowerPC, programmable gate

arrays, etc., a memory **308** (e.g., RAM, ROM), storage devices **310**, a video interface **312**, and input/output interface ports **314**.

The storage systems and associated computer-readable media provide storage of data and executable instructions for the computing device **302**. Storage

5   options include hard-drives, floppy-disks, optical storage, magnetic cassettes, tapes, flash memory cards, memory sticks, digital video disks, and the like, and may be connected to the bus **304** by way of an interface **326**. Computing device **302** is expected to operate in a networked environment using logical connections to one or more remote computing devices **316**, **318** through a network interface **320**, modem **322**,

10   or other communication pathway. Computing devices may be interconnected by way of a network **324** such as a local intranet or the Internet.

Thus, for example, with respect to the illustrated embodiments, assuming computing device **302** is a client seeking to purchase a package containing electronic products and hardware, then remote devices **316**, **318** may be a distribution server and

15   another client connecting to the distribution server to purchase a different package.

It will be appreciated that remote computing devices **316**, **318** may be configured like computing device **302**, and therefore include many or all of the elements discussed for computing device **302**. It should also be appreciated that computing devices **302**, **316**, **318** may be embodied within a single device, or separate

20   communicatively-coupled components, and include routers, bridges, peer devices, web servers, and application programs utilizing network application protocols such as HTTP, File Transfer Protocol (FTP), Gopher, Wide Area Information Server (WAIS), and the like.

Having described and illustrated the principles of the invention with reference to illustrated embodiments, it will be recognized that the illustrated embodiments can be modified in arrangement and detail without departing from such principles.

5 And, even though the foregoing discussion has focused on particular embodiments, it is understood that other configurations are contemplated. In particular, even though expressions such as "in one embodiment," "in another embodiment," and the like are used herein, these phrases are meant to generally reference embodiment possibilities, and are not intended to limit the invention to particular embodiment

10 configurations. As used herein, these terms may reference the same or different embodiments, and unless expressly indicated otherwise, are combinable into other embodiments. Consequently, in view of the wide variety of permutations to the above-described embodiments, the detailed description is intended to be illustrative only, and should not be taken as limiting the scope of the invention.

15 What is claimed as the invention, therefore, is all such modifications as may come within the scope and spirit of the following claims and equivalents thereto.